

USSN 10/755,196
Office Action of 9/7/2005
Amendment Dated 1/9/2006

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listing of claims in the application:

1. - 4. (cancelled)

5. (currently amended) The method of claim ~~[[4]]~~6, further comprising, for each receiver:

convolving potential bit transitions in the received data block with at least two desired bit transitions to generate a correlation waveform corresponding to each of the desired bit transitions; and

generating a bit transition corresponding to the correlation waveform having a highest peak magnitude.

6. (currently amended) A method for determining a location of a digital radio transmitter comprising:

detecting a digitally encoded radio signal radiated from the transmitter by at least three spatially separated receivers;

receiving, at each of the receivers, a common synchronizing pulse;

parsing, at each of the receivers, a received radio signal into data block samples;

time stamping, at each of the receivers, each data block sample with a time stamp offset from the common synchronizing pulse;

detecting, at each of the receivers, potential bit transitions in the data block samples;

generating, at each of the receivers, bit transitions from the potential bit transitions;

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recognizing, at each of the receivers, a desired pattern of bit transitions;

determining, at each of the receivers, a respective time of acquisition for at least some of the bit transitions comprising the desired pattern;

transmitting, from each of the receivers, an indication of the times of acquisition to a central processor;

determining, at a central processor, time of arrival differences among receivers from differences in the respective times of acquisition for common bit transitions in a desired pattern received from each of the receivers;

calculating, at the central processor, the location of the transmitter from the time of arrival differences~~The method of claim 4,~~

further comprising, for each receiver:

associating a first set of times of acquisition with bit transitions comprising the binary forms "01" and "10;"

comparing bit sequences among respective data strings in a repetitively transmitted data string forming at least a portion of the desired pattern to determine if a bit error exists in the data string;

associating a second set of times of acquisition with bits in the data string having "good" calculated time stamps;

determining an intersection of the first set and the second set of times of acquisition;

generating a bit mask corresponding to the intersection;

generating an absolute time of acquisition for at least one bit transition in the signal using an offset value from the common synchronizing pulse;

generating offset times of acquisition for a remainder of bit transitions in the signal using offset values from the absolute time of acquisition;
and

generating an indication of times of acquisition comprising the bit mask, the absolute time of acquisition, and the offset times of acquisition.

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7. (original) The method of claim 6 further comprising:
performing a logical "AND" among the bit masks; and
determining time of arrival differences for common bit transitions
indicated by a result of the logical "AND" of the bit masks.